

THAT WHICH IS CLAIMED:

1. An isolated polypeptide having an amino acid sequence selected from the group consisting of:

5 (a) The amino acid sequence shown in SEQ ID NO:1;

(b) The amino acid sequence encoded by the cDNA contained in ATCC Deposit No. \_\_\_\_\_;

(c) The amino acid sequence of an allelic variant of the amino acid sequence shown in SEQ ID NO:1;

10 (d) The amino acid sequence of an allelic variant of the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. \_\_\_\_\_;

(e) The amino acid sequence of a sequence variant of the amino acid sequence shown in SEQ ID NO:1, wherein the sequence variant is encoded by a nucleic acid molecule hybridizing to the nucleic acid molecule shown in SEQ ID NO: under stringent conditions;

15 (f) The amino acid sequence of a sequence variant of the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. \_\_\_\_\_, wherein the sequence variant is encoded by a nucleic acid molecule hybridizing under stringent conditions to the cDNA contained in ATCC Deposit No. \_\_\_\_\_;

20 (g) A fragment of the amino acid sequence shown in SEQ ID NO, wherein the fragment comprises at least 12 contiguous amino acids;

(h) A fragment of the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. \_\_\_\_\_, wherein the fragment comprises at least 12 contiguous amino acids;

25 (i) The amino acid sequence of the mature polypeptide from about amino acid 6 to the last amino acid shown in SEQ ID NO:1;

(j) The amino acid sequence of the mature polypeptide from about amino acid 6 to the last amino acid encoded by the cDNA clone contained in ATCC Deposit No. \_\_\_\_\_;

30 (k) The amino acid sequence of an epitope bearing region of any one of the polypeptides of (a)-(k).

2. An isolated antibody that selectively binds to a polypeptide of claim 1, (a)-(k).

5 3. An isolated nucleic acid molecule having a nucleotide sequence selected from the group consisting of:

- (a) The nucleotide sequence shown in SEQ ID NO:2;
- (b) The nucleotide sequence in the cDNA contained in ATCC Deposit No. \_\_\_\_\_;
- 10 (c) A nucleotide sequence encoding the amino acid sequence shown in SEQ ID NO:1;
- (d) A nucleotide sequence encoding the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. \_\_\_\_\_; and
- (e) A nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), or (d).

15 4. An isolated nucleic acid molecule having a nucleotide sequence selected from the group consisting of:

- (a) A nucleotide sequence encoding an amino acid sequence of a sequence variant of the amino acid sequence shown in SEQ ID NO:1 that hybridizes to the nucleotide sequence shown in SEQ ID NO:2 under stringent conditions;
- 20 (b) A nucleotide sequence encoding the amino acid sequence of a sequence variant of the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. \_\_\_\_\_, the nucleic acid sequence of the sequence variant hybridizing to the cDNA contained in ATCC Deposit No. \_\_\_\_\_ under stringent conditions; and
- 25 (c) A nucleotide sequence complementary to either of the nucleotide sequences in (a) or (b).

30 5. An isolated nucleic acid molecule having a polynucleotide having a nucleotide sequence selected from the group consisting of:

(a) A nucleotide sequence encoding a fragment of the amino acid sequence shown in SEQ ID NO:1, wherein the fragment comprises at least 12 contiguous amino acids;

(b) A nucleotide sequence encoding a fragment of the amino acid sequence 5 encoded by the cDNA contained in ATCC Deposit No. \_\_\_\_\_, wherein the fragment comprises at least 12 contiguous amino acids;

(c) A nucleotide sequence complementary to either of the nucleotide sequences in (a) or (b).

10 6. A nucleic acid vector comprising the nucleic acid sequences in any of claims 3-5.

7. A host cell containing the vector of claim 6.

15 8. A method for producing any of the polypeptides in claim 1 comprising introducing a nucleotide sequence encoding any of the polypeptide sequences in (a)-(k) into a host cell, and culturing the host cell under conditions in which the proteins are expressed from the nucleic acid.

20 9. A method for detecting the presence of any of the polypeptides in claim 1 in a sample, said method comprising contacting said sample with an agent that specifically allows detection of the presence of the polypeptide in the sample and then detecting the presence of the polypeptide.

25 10. The method of claim 9, wherein said agent is capable of selective physical association with said polypeptide.

11. The method of claim 10, wherein said agent binds to said polypeptide.

30 12. The method of claim 11, wherein said agent is an antibody.

13. The method of claim 11, wherein said agent is a nucleotide triphosphate analog.

14. A kit comprising reagents used for the method of claim 9, wherein the 5 reagents comprise an agent that specifically binds to said polypeptide.

15. A method for detecting the presence of any of the nucleic acid molecules in any of claims 3-5 in a sample, the method comprising contacting said sample with an agent that specifically allows detection of the presence of the nucleic acid molecule in 10 the sample and then detecting the presence of the nucleic acid molecule.

16. The method of claim 15, wherein said method comprises contacting the sample with an oligonucleotide that hybridizes to the nucleic acid sequences under stringent conditions and determining whether the oligonucleotide binds to the nucleic 15 acid sequence in the sample.

17. The method of claim 15, wherein the nucleic acid, whose presence is detected, is mRNA.

20 18. A kit comprising reagents used for the method of claim 15, wherein the reagents comprise a compound that hybridizes under stringent conditions to any of the nucleic acid molecules.

25 19. A method for identifying an agent that interacts with any of the polypeptides of claim 1 in a cell, said method comprising contacting said agent with a cell capable of allowing an interaction between said polypeptide and said agent such that said polypeptide can interact with said agent and measuring the interaction.

30 20. A method of screening a cell to identify an agent that interacts with any of the polypeptides of claim 1 in a cell, said method comprising contacting said agent

with a cell capable of allowing an interaction between said polypeptide and said agent such that said polypeptide can interact with said agent, and measuring the interaction.

21. A method for identifying an agent that binds to any of the polypeptides in  
5 claim 1, said method comprising contacting the polypeptide with an agent that binds to the polypeptide and assaying the complex formed with the agent bound to the polypeptide.

22. The method of claim 21, wherein a fragment of the polypeptide is  
10 contacted.

23. A method of screening a cell to identify an agent that modulates the level or activity of any of the polypeptides of claim 1 in a cell, said method comprising: contacting said agent with a cell capable of expressing said polypeptide such that said 15 polypeptide level or activity can be modulated in said cell by said agent and measuring said polypeptide level or activity.

24. The method of claim 23 wherein said cell is from prostate, uterus, pancreas, testis, tonsils, or is a CD34<sup>+</sup> cell, red blood cell, platelet, erythrocyte, 20 megakaryocyte, or leukocyte.

25. The method of claim 23 wherein said agent increases the level or activity of said polypeptide.

26. The method of claim 23 wherein said agent decreases the level or activity of said polypeptide.

27. The method of claim 19, said method comprising: (1) exposing said agent to said polypeptide under conditions that allow said agent to interact with said 30 polypeptide; (2) adding competing polypeptide that can interact with said agent; and (3)

comparing the amount of interaction between said agent and said polypeptide to the amount of interaction in the absence of said competing polypeptide.

28. The method of claim 19 wherein said interaction is binding.

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29. The method of claim 23 wherein said agent increases interaction between said polypeptide and a target molecule for said polypeptide, said method comprising: combining said polypeptide with said agent under conditions that allow said polypeptide to interact with said target molecule; and detecting the formation of a complex between said polypeptide and said target molecule or activity of said polypeptide as a result of interaction of said polypeptide with said target molecule.

10 30. The method of claim 23 wherein said agent decreases interaction between said polypeptide and a target molecule for said polypeptide, said method comprising: combining said polypeptide with said agent under conditions that allow said polypeptide to interact with said target molecule; and detecting the formation of a complex between said polypeptide and said target molecule or activity of said polypeptide as a result of interaction of said polypeptide with said target molecule.

15 20 31. The method of claim 23 wherein said cell is *in vivo*.

32. The method of claim 31 wherein said cell is in a transgenic animal.

25 33. The method of claim 31 wherein said cell is in a non-transgenic subject.

34. The method of claim 23 wherein said cell is *in vitro*.

35. The method of claim 34 wherein said cell has been disrupted.

30 36. The method of claim 34 wherein said cell is in a biopsy.

37. The method of claim 35 wherein said cell is in cell culture.

38. The method of claim 37 wherein said cell is naturally-occurring or recombinant.

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39. The method of claim 23 wherein said agent is selected from the group consisting of a nucleotide triphosphate analog; peptide; phosphopeptide; antibody; organic molecule; and inorganic molecule.

10 40. A method for modulating the level or activity of any of the polypeptides of claim 1, said method comprising contacting said polypeptide with an agent under conditions that allow the agent to modulate the level or activity of the polypeptide.

15 41. A method for identifying an agent that modulates the level or activity of any of the polypeptides of claim 1 in a cell, said method comprising contacting said agent with a cell capable of expressing said polypeptide such that said polypeptide level or activity can be modulated in said cell by said agent and measuring said polypeptide level or activity.

20 42. A method for identifying an agent that modulates the level or activity of any of the nucleic acid molecules of claims 3-5 in a cell, said method comprising contacting said agent with the cell capable of expressing/said nucleic acid molecule such that said nucleic acid molecule level or activity can be modulated in said cell by said agent and measuring said nucleic acid molecule level or activity.

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43. A method of screening a cell to identify an agent that modulates the level or activity of any of the nucleic acid molecules in claims 3-5 in said cell, said method comprising contacting said agent with the cell capable of expressing said nucleic acid molecule such that said nucleic acid molecule level or activity can be modulated in said 30 cell by said agent and measuring nucleic acid molecule level or activity.

44. A method for identifying an agent that interacts with any of the nucleic acid molecules of claims 3-5 in a cell, said method comprising contacting said agent with a cell capable of allowing an interaction between said nucleic acid molecule and said agent such that said nucleic acid molecule can interact with said agent in measuring the interaction.

45. A method of screening a cell to identify an agent that interacts with any of the nucleic acid molecules of claims 3-5 in a cell, said method comprising contacting said agent with a cell capable of allowing an interaction between said nucleic acid molecule and said agent such that said nucleic acid molecule can interact with said agent and measuring the interaction.

46. A method for modulating the level or activity of any of the nucleic acid molecules of claims 3-5, said method comprising contacting said nucleic acid molecule with an agent under conditions that allow the agent to modulate the level or activity of the nucleic acid molecule.

47. The method of claim 46 wherein said modulation is in cells or tissue selected from the group consisting of prostate, uterus, pancreas, testis, tonsils, CD34<sup>+</sup> cells, red blood cells, erythrocytes, platelets, megakaryocytes, B cells, T cells, granulocytes and monocytes.

48. The method of claim 46 wherein said modulation is *in vivo*.

49. The method of claim 48 wherein said modulation is in a patient having a disorder involving prostate, uterus, pancreas, testis, tonsils, CD34<sup>+</sup> cells, red blood cells, erythrocytes, platelets, megakaryocytes, B cells, T cells, granulocytes and monocytes.

50. The method of claim 49 wherein said modulation is in a patient having or predisposed to having anemia, neutropenia, or thrombocytopenia.

51. A method of treating a disorder involving anemia, neutropenia, or thrombocytopenia in a subject in need of such treatment, said method comprising administering any of the polypeptides of claim 1 to said subject in a therapeutically effective amount.

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52. A method of treating anemia, neutropenia, or thrombocytopenia in a subject in need of such treatment, said method comprising administering any of the polypeptides of claim 1 to said subject in therapeutically effective amounts.

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53. A pharmaceutical composition containing any of the polypeptides in claim 1 in a pharmaceutically acceptable carrier.

54. A pharmaceutically acceptable composition containing any of the nucleic acid molecules of claims 3-5 in a pharmaceutically acceptable carrier.

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55. A nonhuman transgenic animal wherein one or more cells of said animal contains any of the nucleic acid sequences of claims 3-5.

20 56. A nonhuman transgenic animal wherein one or more cells of said animal contains any of the nucleic acid sequences of claims 3-5, wherein said cell expresses any of the polypeptides of claim 1.

25 57. A method for producing a transgenic animal according to claim 56, said method comprising introducing any of the nucleic acid sequences of claims 3-5 into a cell, wherein said cell is present in said animal or gives rise to said animal.

58. An agent identified by any of the methods of claims 19-39.

59. An agent identified by any of the methods of claims 41-45.

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